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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/224,376	12/31/1998	JOSEPH C. HARVELL	709000	3762

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EXAMINER

CHANG, JUNGWON

ART UNIT PAPER NUMBER

2154

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/224,376

Applicant(s)

HARVELL, JOSEPH C.

Examiner

Jungwon Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 32-34 and 36-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 is/are allowed.
- 6) ☒ Claim(s) 32, 37-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**FINAL ACTION**

1. Claims 32, 34, 36-37 and 43-44 are amended and claim 35 is cancelled filed on 9/15/03. Claims 32-34 and 36-44 are presented for examination.
2. The text of those sections of Title 35, U.S. Code not included in this office action can be found in a prior action.
3. Claim 36 is allowed.
4. Claims 32-34 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. The following terms lack proper antecedent basis:
    - i. the group – claim 32, line 14; claim 44, line 17;
    - ii. the connection – claim 32, line 14; claim 44, line 17;
  - b. The claim language in the following claims is not clearly understood:
    - i. as to claim 32, line 14, it is not clearly understood what is meant by “imposing a minimum heartbeat period on the single selected computer based on reliability of the connection between the server and one or more computers in the group”. For example, the heartbeat message is directly

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sending between the single selected computer and one or more selected servers as claimed in lines 3-4, but how a minimum heartbeat period on the selected computer imposed based on reliability of the connection between the server and one or more computers?, and the sentence "the connection between the server and one or more computers" is not adequately described;

Line 14, it is uncertain whether the server refers to one or more selected servers in line 3;

ii. as to claim 44, it has the same deficiency as claim 1 as set forth in the paragraph above.

5. Claims 32 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (US 5,938,732), hereinafter referred to as Lim, further in view of Arendt et al. (US 6,427,163 B1), hereinafter referred to as Arendt.

6. As to claim 32, Lim discloses the invention substantially as claimed, including the method for implementing a heartbeat protocol (col. 3, lines 30-37), comprising: sending, to one or more selected server, heartbeat messages from a single selected computer (col. 3, lines 38-47), indicating the availability of computer resources on one or more computers (col. 3, lines 30-37; col. 8, lines 23-38; col. 9, lines 34-44), such that the loss of a heartbeat from the single selected machine is indicative that all computer resources are unavailable (i.e., failure detection; col. 4, lines 8-9; col. 6, lines 54-62; col. 8, lines

23-35; col. 12, lines 39-50), and the presence of a heartbeat from the selected machine is indicative that all computer resources are available (col. 5, lines 21-35 and 66-67; col. 6, lines 1-6); generating a message by the single selected computer in accordance with the heartbeat protocol to indicate availability status of the one or more computer resources (col. 3, lines 34-37; col. 5, line 66 – col. 6, line 6 and 15-26; col. 8, lines 23-38; col. 9, lines 34-44).

7. Lim does not specifically disclose sending heartbeat messages directly to a server. However, Arendt discloses point-to-point communication used for sending heartbeat messages between nodes (col. 4, lines 38-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lim and Arendt because Arendt's point-to-point communication (i.e., unicast) would allow the computer to transmit the heartbeat messages directly to other computer(s), thereby providing private communication.

8. As to claim 37, Lim further discloses determining from the presence or absence of the heartbeat messages that all computer resources are available or unavailable (col. 3, lines 34-37; col. 5, line 66 – col. 6, line 6 and 15-26; col. 8, lines 23-38; col. 9, lines 34-44); and providing a response to a message query for the computer resources for which the heartbeat is absent that the computer resources are unavailable (i.e., failure detection; col. 4, lines 8-9; col. 6, lines 54-62; col. 8, lines 23-35; col. 12, lines 39-50).

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9. As to claims 38-40, Lim discloses providing additional information associated with the response to the message query concerning when the computer resources is expected to become available (col. 5, lines 61-65; col. 7, lines 55-58; col. 3, lines 44-47).

10. As to claim 41, Lim discloses the heartbeat is monitored by a primary master name server for a zone of a communications network comprising the computer resources (col. 3, lines 48-52 and 66-67 – col. 4, line 4; col. 6, lines 15-36).

11. As to claim 42, Lim discloses the heartbeat is generated by at least one computer within a domain name zone (col. 7, lines 24-37; col. 6, lines 32-45).

12. As to claim 43, Lim discloses the invention substantially as claimed in claim 32. In addition, Lim discloses transmitting the message to the one or more selected servers (col. 5, lines 25-35 and 66-67 – col. 6, line 6).

13. As to claim 44, Lim discloses the invention substantially as claimed in claim 32. In addition, Lim discloses providing a response to a message query for the computer resources for which the heartbeat is absent that the computer resources are unavailable (col. 6, lines 54-58; col. 12, line 61 – col. 13, line 8).

14. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable

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over Lim et al. (US 5,938,732) and Arendt et al. (US 6,427,163 B1), as applied to claims 32, and 37-42 above, further in view of Olarig et al. (US 6,370,656 B1), hereinafter referred to as Olarig.

15. As to claims 33 and 34, Lim and Arendt do not specifically disclose requesting a new heartbeat rate. However, Olarig discloses dynamically changing heartbeat rates according to system demand (col. 3, lines 20 and 34-36; col. 4, lines 46-48; col. 6, line 59 – col. 7, line 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lim, Arendt, and Olarig because Olarig's dynamically changing heartbeat rates would improve the integrity of the system by allowing the system to monitor more frequently for detection of failure by increasing heartbeat rate (i.e., decrease heartbeat interval).

16. Applicant's arguments filed on 9/15/03 have been fully considered but they are not persuasive.

17. In the remarks, applicants argued in substance that

(1) Amended claim 32 now includes the feature "imposing a minimum heartbeat period...based on reliability of the connection between the server and one or more computers in the group." Lim and Arendt do not disclose imposing a minimum heartbeat rate or basing this rate on reliability of the connection.

(2) Lim does not teach "providing a response to a message query for the computer

resources for which the heartbeat is absent that the computer resources are unavailable" by the one or more selected servers.

(3) Lim does not disclose, "transmitting the message to the one or more selected servers"

18. Examiner respectfully traverses applicants' remark.

19. As to point (1), claims 32-34 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (please see the rejection as set forth in paragraph #4 above).

As to point (2), in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., by the one or more selected servers) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Furthermore, Lim teaches providing a response (i.e., DNS changes, zone modification) to a message query for the computer resources for which the heartbeat is absent that the computer resources are unavailable (col. 7, lines 24-58).

As to point (3), applicants failed to consider the teaching of Lim that transmitting the message to the one or more selected servers (col. 3, lines 30-37).



20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jungwon Chang whose telephone number is (703)305-9669. The examiner can normally be reached on 9:30-6:00 (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-9669.

Jungwon Chang  
January 6, 2004



JOHN FOLLANSBEE  
SUPERVISORY PATENT EXAMINER  
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